Star wars : the strategic defence initiative

BP-123E

STAR WARS

THE STRATEGIC DEFENCE INITIATIVE

Dean N. Clay

Science and Technology Division
Research Branch
Ottawa

22 April 1985

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Cat. No. YM32-2/123E

ISBN 0-660-12414-9

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INTRODUCTION

In June of 1984, the United States conducted a test in a series called the Homing Overlay Experiment. A ballistic missile carrying a dummy warhead was launched from Vandenberg Air Force Base in California and targeted at a spot north of Kwajalein Island in the Pacific Ocean.

American radars detected the incoming warhead and fed information to computers which determined its trajectory, launching a defending missile from Kwajalein. Rising above the atmosphere, this vehicle was guided by an infrared telescope and associated data processor towards the approaching warhead. The defending missile deployed an array of thin metal arms, reminiscent of the stays of an umbrella, and struck the warhead at a closing velocity of 20,000 miles per hour, destroying it. Quite literally, a bullet had stopped a bullet.

This impressive experimental success, which followed two failed attempts, leaves little doubt that non-nuclear technologies can be developed to attack intercontinental ballistic missiles in flight. It does not demonstrate, however, that a full or strategic defence can be assembled to protect an extended area of the globe against a massive missile launch. The feasibility of strategic defence has become the subject of intense debate in the United States today.

This paper reviews the Strategic Defence Initiative announced by President Reagan in early 1983.

THE CONCEPT

In his 23 March 1983 address to the nation, President Reagan announced the Strategic Defence Initiative (SDI), with its prospect of creating an effective defence for the United States and its allies against ballistic missiles.

> ... I call upon the scientific community in our country, those who gave us nuclear weapons, to turn their great talents now to the cause of mankind and world peace, to give us the means of rendering these nuclear weapons impotent and obsolete.(1)

The President envisioned a non-nuclear defensive system which could intercept and destroy strategic ballistic missiles in flight, moving the United States beyond the era of seeking to deter nuclear war through the threat of massive retaliation. In attempting "to break out of a future that relies solely on offensive retaliation for our security", Reagan argued "isn't it worth every investment to free the world from the threat of nuclear war?"

The strategic defence concept involves a multi-layered, survivable defensive system based substantially in space, employing weapons such as lasers and particle-beam guns to attack enemy missiles throughout their flight. This idea of a "defence-in-depth" has evolved because no single technology is considered adequate to provide an impenetrable defensive shield against a strategic nuclear attack.

How does SDI propose to counter such an attack? The basic elements of any ballistic missile defensive system are target detection, recognition, tracking and destruction. Present technology uses ground-based radar and interceptor missiles armed with nuclear warheads to attack as the

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(1) President Reagan's remarks as reproduced in: Sidney D. Drell, Philip J. Farley and David Holloway, The Reagan Defense Initiative: A Technical, Political, and Arms Control Assessment, Special Report, Center for International Security and Arms Control, Stanford University, Stanford, California, July 1984, p. 103.

ballistic missile nears its target. Ballistic missile trajectories can be subdivided into three components, however, with SDI featuring "layers" of defence weaponry to attack the missile almost anywhere along its flight path. This may be illustrated using MIRVed (multiple independently-targetable reentry vehicle) ICBMs (intercontinental ballistic missiles) as the example, with their approximately 30-minute flight time between the Soviet Union and the United States. Figure 1 on page 4 schematically illustrates the three intercept zones in the ICBM's trajectory.

- The first layer of the proposed defensive system would engage enemy ICBMs in their boost phase, shortly after launch while the first and second stage rocket engines are still firing. This part of the flight typically lasts from three to five minutes. Successful engagement in the boost phase would destroy all the warheads carried by the missile.
- The second element of the missile's flight is the midcourse or coasting phase, which lasts some 20-25 minutes at intercontinental ranges. During this time the post-boost vehicle ("bus") separates from the main engines and then dispenses the individual warheads (reentry vehicles or RVs) and penetration aids such as decoys and chaff. Unless the bus can be destroyed early in the coasting phase before RV deployment, defence is complicated by having to contend with very many more (and much smaller) targets, although there is also more time available to track and kill the RVs.
- The terminal layer of defence would engage the reentry vehicles during the last minute or two of flight as the RVs come back down through the atmosphere. In this phase the system requirements are less stringent, point defence of typically hardened targets being a much simpler matter than nationwide strategic defence. Terminal ICBM defence has been developed to some degree in earlier ABM (anti-ballistic missile) work.

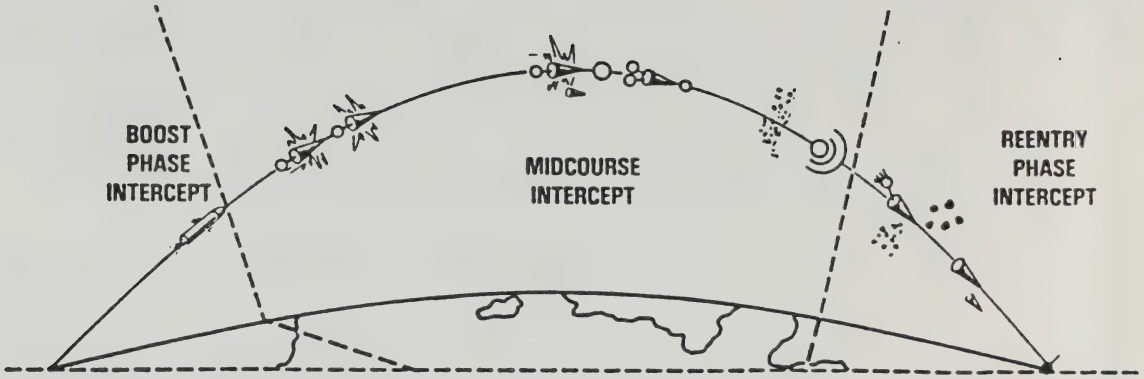

FIGURE 1.

Figure 1: Intercept Zones for a Ballistic Missile Trajectory

Boost Phase: Lasts approximately 150-300 seconds as the rocket engines propel the missile through and out of the atmosphere.

Midcourse Phase: Bus, warheads and decoys coast on ballistic trajectories for 1,000-1,500 seconds (at intercontinental ranges), rising to an altitude of roughly 1,000 km (620 miles).

Reentry Phase: Lasts perhaps 60-120 seconds as reentry vehicles pass through atmosphere.

THE TECHNOLOGY OF SDI

The ultimate success of SDI rests upon largely undemonstrated technological capabilities.

> The major technical fact that has not changed with time is the overwhelming destructive power of nuclear weapons. To speak, as President Reagan did, of "rendering nuclear weapons impotent and obsolete" by defending one's vital national interests -- people, industries, cities -- against a massive nuclear attack still requires a defense that is almost perfect. Technical assessments of ABM concepts cannot escape this awesome systems requirement ....(1)

If the Soviet Union were to launch all of its present land-based and sea-based ballistic missiles against such a hypothetical defensive system, and if the defence were 99% effective in combatting this attack, some 80 warheads would still reach their targets.

To provide a ballistic missile defence capable of engaging a massive attack throughout its flight implies that the complete system be capable of certain key functions. Dr. Richard DeLauer, U.S. Under-Secretary of Defense for Research and Engineering, enumerated these functions in a recent article.(2)

- **Prompt and Reliable Attack Warning and Defence Initiation**

  Global, full-time surveillance is required to detect the attack, to define its destination and intensity, and to provide data for boost-phase intercept and post-boost tracking.

- **Continuous Tracking of All Threatening Objects Throughout Their Trajectories**

  The tracking system must assemble the required information with accurate and timely data transfer to intercept systems for attack assignment.

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(1) Drell et al (1984), p. 40.

(2) Richard D. DeLauer, "Antiballistic Missile Defense -- The Opportunity and the Challenge", NATO's Sixteen Nations, Vol. 29, No. 6, November 1984, p. 22-26.

- **Efficient Intercept and Destruction**

  The defence must be capable of dealing with any attack up to a massive, simultaneous launch.

- **Terminal Intercept**

  The defence must be capable of the relatively short-range engagement of reentering warheads.

- **Battle Management, Communications and Data Processing**

  The defence must have the required connecting elements for its various system components to achieve effectiveness and economy of force.

In turn, the U.S. Department of Defense has established five technical areas of SDI in which it will concentrate its activities.(1)

- **Surveillance, Acquisition and Tracking**

  The technology must be able to detect, track and discriminate objects in all phases of the ballistic trajectory, while continuing to operate reliably under direct enemy attack and in an environment experiencing nuclear weapons effects. All the defensive systems envisaged rely on space-based sensors for early warning; for command, control and communications; and for overall battle management. The combination of technology and tactics needed to ensure the survival of the space-based components of a defensive system under attack has yet to be developed.

- **Directed Energy Weapons**

  The goal of directed energy weapons is to deposit enough energy in the target within a brief time to destroy it. This line of research is considering four basic weapons concepts: space-based lasers, ground-based lasers, space-based particle beams and nuclear-driven directed energy weapons.

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(1) Ibid.

o **Kinetic Energy Weapons**

The goal of kinetic energy weapons is to hit attacking missiles with an inert object moving so rapidly that the energy of the collision achieves destruction. Research here is concentrating on interceptor missiles and hyper-velocity gun systems (such as the magnetic rail gun, parked in space, which would employ a magnetic field to accelerate a piece of metal along a rail and fire it at great velocity).

o **Battle Management**

A battle management (BM)/command, control and communications (C^3) project will develop the technologies for implementing "a highly responsive, ultra reliable, survivable, endurable and cost effective BM/C^3 and supporting technologies".

o **Support Programs**

A number of SDI support-related questions require answering and some of the individual programs studying those questions are:

-- lethality and target hardening,
-- system survivability,
-- space prime power and power conversion, and
-- space logistics.

Figure 2, page 8, is a schematic illustration of some potential components of SDI. The defence is shown countering ballistic missiles of various range and trajectory; it does not provide protection against manned bombers or cruise missiles.

The overall effectiveness of the system is strongly dependent on the success of boost-phase intercept. Each missile is capable of carrying tens of reentry vehicles and a hundred or more decoys, and a strategic defence might well have to contend with a swarm of a half-million or more objects following bus deployment.

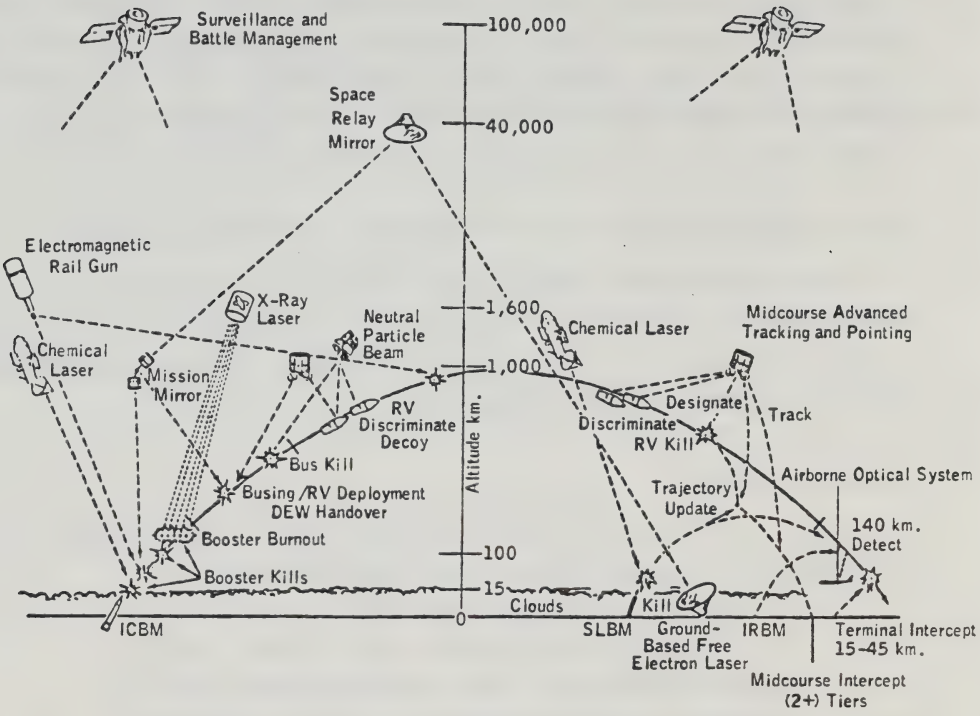

FIGURE 2.

Figure 2: A Hypothetical Illustration of SDI Hardware

ICBM: Intercontinental ballistic missile
SLBM: Submarine-launched ballistic missile
IRBM: Intermediate-range ballistic missile
RV: Reentry vehicle
DEW: Distant early warning

Source: Drell et al (1984), p. 43.

DeLauer's article also presented a notional development schedule for SDI. First is the research phase which extends into the early 1990s. A fiscal year 1985-1989 research program, initially projected to cost $26 billion, has been outlined and SDI funding in FY 1985 amounts to $1.4 billion. The White House is expected to request $3.2 billion in FY 1986 but a number of Congressmen are attempting to limit SDI support, perhaps to $2 billion next year.(1) DeLauer claims that all activities during this phase "will be fully consistent with the ABM Treaty and with our other treaty obligations."(2) The research will demonstrate if strategic defence is technologically feasible and will provide the President and Congress with the information required for a decision on further development.

Second is the systems development or full-scale engineering development phase. If the research work is judged successful and if the political decision is taken to continue, then the prototypes of the SDI components will be designed, built and tested in this phase.

During the transition phase, there will be an incremental and sequential deployment of the new defensive systems. And the final phase is defined as the deployment of a highly effective multi-phased defensive system to combat ballistic missile attack. Evidently this goal lies early in the next century.

Some of the technologies involved in SDI are quite exotic and complex; a discussion of their feasibility lies beyond the scope of a brief survey paper. While the physics involved is readily demonstrable, the engineering development which would be necessary to support any system of strategic defence is truly monumental. Some observers have flatly stated that it is not possible at any bearable cost in money, talent and time. Others maintain that the advances of technology invariably confound the skeptics. A clear resolution of this debate seems years in the future.

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(1) "$2-Billion Limit Proposed for SDI", Aviation Week & Space Technology, Vol. 122, No. 4, 28 January 1985, p. 27.

(2) DeLauer (1984), p. 26.

SDI AND THE ABM TREATY

The ABM Treaty (Treaty Between the United States of America and the Union of Soviet Socialist Republics on the Limitation of Anti-Ballistic Missile Systems) was signed at Moscow on 26 May 1972 by President Richard Nixon and General Secretary Leonid Brezhnev. It entered into force on 3 October 1972 and is of indefinite duration; either Party can withdraw, however, on six months notice. Appendix A to this paper presents the text of the ABM Treaty.

Under the terms of the original treaty, both countries could deploy two limited ABM systems, one defending the national capital and one defending an ICBM complex. Each of these systems was limited to 100 ABM launchers and 100 ABM interceptor missiles, a specified number of ABM radars, and a deployment area no larger than 150 km in radius.

In a short Protocol to the ABM Treaty (included as Appendix B), signed at Moscow on 3 July 1974 and entering into force on 24 May 1976, the number of ABM systems which each country could deploy was reduced from two to one. The Soviet Union chose to continue with the ABM system it had already established around Moscow and continues to improve upon that system today. The United States elected to build the Safeguard ABM system defending an ICBM complex. The Safeguard installation at Grand Forks, North Dakota, was subsequently dismantled in 1976, only 10 months after becoming operational, when the U.S. decided that the system offered little protection to its missile silos.

Two provisions of the ABM Treaty are especially relevant to this discussion. Article 1, paragraph 2, states:

> Each Party undertakes not to deploy ABM systems for a defense of the territory of its country and not to provide a base for such defense, and not to deploy ABM systems for defense of an individual region except as provided for in Article III of this Treaty.(1)

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(1) United States, Arms Control and Disarmament Agency, Arms Control and Disarmament Agreements: Texts and Histories of Negotiations, 1982 Edition, Washington, 1982, p. 139.

Article V, paragraph 1, adds the following:

> Each Party undertakes not to develop, test or deploy ABM systems or components which are sea-based, air-based, space-based, or mobile land-based.(1)

While basic research into the technologies underlying SDI is not prohibited under this Treaty, the United States could not move beyond the research phase without contravening its terms. The testing already carried out as part of the Homing Overlay Experiment, in which the target ICBM was intercepted and destroyed at an altitude of 160 km, appears inconsistent with Treaty provisions. Indeed, former U.S. Ambassador Gerard Smith, testifying before the U.S. Senate in 1972, indicated that field testing of ABM technologies marked the line of demarcation between research allowed under the ABM Treaty and engineering development not permitted.

One novel weapon proposed for ballistic missile defence is the X-ray laser. This device would consist of a small nuclear bomb surrounded by lasing rods. Aimed at its targets and the nuclear bomb detonated, the device would emit a huge pulse of directed X-rays in the instant before it disintegrated. Such a weapon would violate both the Outer Space Treaty of 1967 and the Limited Nuclear Test Ban Treaty of 1963.

Clearly if SDI progresses beyond the research phase, it threatens the structure of arms control agreements painstakingly arrived at over the years.

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(1) Ibid., p. 140.

ARGUMENTS FOR AND AGAINST SDI

The debate over the merits of strategic defence has been vigorous. Some of the arguments advanced either in favour of or against the proposal can only be resolved when the technologies involved are better understood and more extensively developed, which itself is a contentious issue. The following list summarizes a variety of opinions which have been expressed in the rapidly expanding literature on this subject; the reader will note that a number of the pros and cons are directly contradictory. No attempt is made to assess the merits of the various arguments.

A. Arguments for SDI

- SDI replaces the doctrine of mutual assured destruction, in which the threat of retaliation is the only defence against nuclear attack, with the notion of assured survival.
- Strategic defence protects both the general population and military forces.
- An effective defence against ballistic missiles reduces the likelihood of war because such missiles cannot then be used to support a pre-emptive nuclear strike.
- SDI research and development will address ballistic missile defence at all ranges -- strategic, theatre and tactical -- so that the defence can extend to Allies as well as the United States.
- By reducing the value of offensive forces, SDI would create incentives for negotiated reductions in those forces.
- SDI's concept of defence-in-depth allows for an overall system which can be highly effective, while tolerating some "leakage" in each defensive tier.
- If NATO were to possess an effective strategic defence, it could not be forced into a "launch-on-warning" situation and into committing offensive nuclear weapons which are not recallable.
- The Soviet Union already possesses considerable expertise in the field of space weaponry and the United States cannot afford to allow the Soviets to increase their lead in this aspect of weapons technology.

- The United States has charged that the huge new Russian radar installation under construction at Abalakova in central Siberia violates the SALT I accord and the ABM Treaty in that it can support a rapidly deployable ABM defence of Soviet territory; the U.S. cannot afford the risk of a Soviet "ABM breakout".
- SDI would marshall an impressive variety of technologies to defend against ballistic missiles, making it very difficult for the adversary to circumvent the defence.

B. Arguments against SDI

- The effectiveness of strategic defence would always be uncertain, given that the system cannot be tested against a full-scale attack and given the uncertainties inherent in the operations of complex systems.
- Highly effective defences against ballistic missiles could increase the likelihood of conventional wars, which would be a particular concern to European countries having already suffered through two world wars.
- SDI threatens the ABM Treaty; as elements of this defence program reach the stage of field testing and engineering development, the Treaty's provisions will be progressively eroded.
- With R&D expenditures on strategic defence projected to total some $30 billion by 1990, this program will account for a major part of the potential growth in U.S. scientific and technical activity. Or, as it has been more picturesquely phrased, "Star Wars may cannibalize civilian R&D".
- SDI could violate the long-established ban on placing "nuclear weapons or any other kinds of weapons of mass destruction" in orbit around the Earth, as embodied in the 1967 Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, Including the Moon and Other Celestial Bodies.(1)

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(1) United States, Arms Control and Disarmament Agency (1982), p. 51-55.

- A nation which establishes a highly effective strategic defence may be tempted to launch a first strike against an adversary, knowing that it is immune to counterattack. The result will be another costly escalation in the arms race as the other side attempts to avoid this vulnerability.
- The many years that it would take to develop a complex system of strategic defence would give the Soviets ample time to devise means of circumventing it.
- Do technical trends actually favour defence over offence, after having evidently favoured offensive systems since the appearance of the atomic bomb in 1945?
- SDI will further unsettle East-West relations for the sake of a "highly dubious technological adventure" whose cost will be enormous.
- SDI is a unilateral change by the United States in its present strategic relationship with the U.S.S.R., one that is hardly likely to prompt the Soviets to be receptive to U.S. proposals for mutual reductions in ballistic missiles while SDI research is carrying forward.

Treaty Between the United States of America and the Union of Soviet Socialist Republics on the Limitation of Anti-Ballistic Missile Systems

Signed at Moscow May 26, 1972
Ratification advised by U.S. Senate August 3, 1972
Ratified by U.S. President September 30, 1972
Proclaimed by U.S. President October 3, 1972
Instruments of ratification exchanged October 3, 1972
Entered into force October 3, 1972

The United States of America and the Union of Soviet Socialist Republics, hereinafter referred to as the Parties,

Proceeding from the premise that nuclear war would have devastating consequences for all mankind,

Considering that effective measures to limit anti-ballistic missile systems would be a substantial factor in curbing the race in strategic offensive arms and would lead to a decrease in the risk of outbreak of war involving nuclear weapons,

Proceeding from the premise that the limitation of anti-ballistic missile systems, as well as certain agreed measures with respect to the limitation of strategic offensive arms, would contribute to the creation of more favorable conditions for further negotiations on limiting strategic arms,

Mindful of their obligations under Article VI of the Treaty on the Non-Proliferation of Nuclear Weapons,

Declaring their intention to achieve at the earliest possible date the cessation of the nuclear arms race and to take effective measures toward reductions in strategic arms, nuclear disarmament, and general and complete disarmament,

Desiring to contribute to the relaxation of international tension and the strengthening of trust between States,

Have agreed as follows:

Article I

1. Each party undertakes to limit anti-ballistic missile (ABM) systems and to adopt other measures in accordance with the provisions of this Treaty.

2. Each Party undertakes not to deploy ABM systems for a defense of the territory of its country and not to provide a base for such a defense, and not to deploy ABM systems for defense of an individual region except as provided for in Article III of this Treaty.

Article II

1. For the purpose of this Treaty an ABM system is a system to counter strategic ballistic missiles or their elements in flight trajectory, currently consisting of:

(a) ABM interceptor missiles, which are interceptor missiles constructed and deployed for an ABM role, or of a type tested in an ABM mode;

(b) ABM launchers, which are launchers constructed and deployed for launching ABM interceptor missiles; and

(c) ABM radars, which are radars constructed and deployed for an ABM role, or of a type tested in an ABM mode.

2. The ABM system components listed in paragraph 1 of this Article include those which are:

(a) operational;
(b) under construction;
(c) undergoing testing;
(d) undergoing overhaul, repair or conversion; or
(e) mothballed.

Article III

Each Party undertakes not to deploy ABM systems or their components except that:

(a) within one ABM system deployment area having a radius of one hundred and fifty kilometers and centered on the Party's national capital, a Party may deploy: (1) no more than one hundred ABM launchers and no more than one hundred ABM interceptor missiles at launch sites, and (2) ABM radars within no more than six ABM radar complexes, the area of each complex being circular and having a diameter of no more than three kilometers; and

(b) within one ABM system deployment area having a radius of one hundred and fifty kilometers and containing ICBM silo launchers, a Party may deploy: (1) no more than one hundred ABM launchers and no more than one hundred ABM interceptor missiles at launch sites, (2) two large phased-array ABM radars comparable in potential to corresponding ABM radars operational or under construction on the date of signature of the Treaty in an ABM system deployment area containing ICBM silo launchers, and (3) no more than eighteen ABM radars each having a potential less than the potential of the smaller of the above-mentioned two large phased-array ABM radars.

Article IV

The limitations provided for in Article III shall not apply to ABM systems or their components used for development or testing, and located within current or additionally agreed test ranges. Each Party may have no more than a total of fifteen ABM launchers at test ranges.

Article V

1. Each Party undertakes not to develop, test, or deploy ABM systems or components which are sea-based, air-based, space-based, or mobile land-based.

2. Each Party undertakes not to develop, test, or deploy ABM launchers for launching more than one ABM interceptor missile at a time from each launcher, not to modify deployed launchers to provide them with such a capability, not to develop, test, or deploy automatic or semi-automatic or other similar systems for rapid reload of ABM launchers.

Article VI

To enhance assurance of the effectiveness of the limitations on ABM systems and their components provided by the Treaty, each Party undertakes:

(a) not to give missiles, launchers, or radars, other than ABM interceptor missiles, ABM launchers, or ABM radars, capabilities to counter strategic ballistic missiles or their elements in flight trajectory, and not to test them in an ABM mode; and

(b) not to deploy in the future radars for early warning of strategic ballistic missile attack except at locations along the periphery of its national territory and oriented outward.

Article VII

Subject to the provisions of this Treaty, modernization and replacement of ABM systems or their components may be carried out.

Article VIII

ABM systems or their components in excess of the numbers or outside the areas specified in this Treaty, as well as ABM systems or their components prohibited by this Treaty, shall be destroyed or dismantled under agreed procedures within the shortest possible agreed period of time.

Article IX

To assure the viability and effectiveness of this Treaty, each Party undertakes not to transfer to other States, and not to deploy outside its national territory, ABM systems or their components limited by this Treaty.

Article X

Each Party undertakes not to assume any international obligations which would conflict with this Treaty.

Article XI

The Parties undertake to continue active negotiations for limitations on strategic offensive arms.

Article XII

1. For the purpose of providing assurance of compliance with the provisions of this Treaty, each Party shall use national technical means of verification at its disposal in a manner consistent with generally recognized principles of international law.

2. Each Party undertakes not to interfere with the national technical means of verification of the other Party operating in accordance with paragraph 1 of this Article.

3. Each Party undertakes not to use deliberate concealment measures which impede verification by national technical means of compliance with the provisions of this Treaty. This obligation shall not require changes in current construction, assembly, conversion, or overhaul practices.

Article XIII

1. To promote the objectives and implementation of the provisions of this Treaty, the Parties shall establish promptly a Standing Consultative Commission, within the framework of which they will:

(a) consider questions concerning compliance with the obligations assumed and related situations which may be considered ambiguous;

(b) provide on a voluntary basis such information as either Party considers necessary to assure confidence in compliance with the obligations assumed;

(c) consider questions involving unintended interference with national technical means of verification;

(d) consider possible changes in the strategic situation which have a bearing on the provisions of this Treaty;

(e) agree upon procedures and dates for destruction or dismantling of ABM systems or their components in cases provided for by the provisions of this Treaty;

(f) consider, as appropriate, possible proposals for further increasing the viability of this Treaty; including proposals for amendments in accordance with the provisions of this Treaty;

(g) consider, as appropriate, proposals for further measures aimed at limiting strategic arms.

2. The Parties through consultation shall establish, and may amend as appropriate, Regulations for the Standing Consultative Commission governing procedures, composition and other relevant matters.

Article XIV

1. Each Party may propose amendments to this Treaty. Agreed amendments shall enter into force in accordance with the procedures governing the entry into force of this Treaty.

2. Five years after entry into force of this Treaty, and at five-year intervals thereafter, the Parties shall together conduct a review of this Treaty.

Article XV

1. This Treaty shall be of unlimited duration.

2. Each Party shall, in exercising its national sovereignty, have the right to withdraw from this Treaty if it decides that extraordinary events related to the subject matter of this Treaty have jeopardized its supreme interests. It shall give notice of its decision to the other Party six months prior to withdrawal from the Treaty. Such notice shall include a statement of the extraordinary events the notifying Party regards as having jeopardized its supreme interests.

Article XVI

1. This Treaty shall be subject to ratification in accordance with the constitutional procedures of each Party. The Treaty shall enter into force on the day of the exchange of instruments of ratification.

2. This Treaty shall be registered pursuant to Article 102 of the Charter of the United Nations.

DONE at Moscow on May 26, 1972, in two copies, each in the English and Russian languages, both texts being equally authentic.

FOR THE UNITED STATES OF AMERICA

RICHARD NIXON

President of the United States of America

FOR THE UNION OF SOVIET SOCIALIST REPUBLICS

L. I. BREZHNEV

General Secretary of the Central Committee of the CPSU

APPENDIX B

Protocol to the Treaty Between the United States of America and the Union of Soviet Socialist Republics on the Limitation of Anti-Ballistic Missile Systems

Signed at Moscow July 3, 1974
Ratification advised by U.S. Senate November 10, 1975
Ratified by U.S. President March 19, 1976
Instruments of ratification exchanged May 24, 1976
Proclaimed by U.S. President July 6, 1976
Entered into force May 24, 1976

The United States of America and the Union of Soviet Socialist Republics, hereinafter referred to as the Parties,

Proceeding from the Basic Principles of Relations between the United States of America and the Union of Soviet Socialist Republics signed on May 29, 1972,

Desiring to further the objectives of the Treaty between the United States of America and the Union of Soviet Socialist Republics on the Limitation of Anti-Ballistic Missile Systems signed on May 26, 1972, hereinafter referred to as the Treaty,

Reaffirming their conviction that the adoption of further measures for the limitation of strategic arms would contribute to strengthening international peace and security,

Proceeding from the premise that further limitation of anti-ballistic missile systems will create more favorable conditions for the completion of work on a permanent agreement on more complete measures for the limitation of strategic offensive arms,

Have agreed as follows:

Article I

1. Each Party shall be limited at any one time to a single area out of the two provided in Article III of the Treaty for deployment of anti-ballistic missile (ABM) systems or their components and accordingly shall not exercise its right to deploy an ABM system or its components in the second of the two ABM system deployment areas permitted by Article III of the Treaty, except as an exchange of one permitted area for the other in accordance with Article II of this Protocol.

2. Accordingly, except as permitted by Article II of this Protocol: the United States of America shall not deploy an ABM system or its components in the area centered on its capital, as permitted by Article III(a) of the Treaty, and the Soviet Union shall not deploy an ABM system or its components in the deployment area of intercontinental ballistic missile (ICBM) silo launchers as permitted by Article III(b) of the Treaty.

Article II

1. Each Party shall have the right to dismantle or destroy its ABM system and the components thereof in the area where they are presently deployed and to deploy an ABM system or its components in the alternative area permitted by Article III of the Treaty, provided that prior to initiation of construction, notification is given in accord

with the procedure agreed to in the Standing Consultative Commission, during the year beginning October 3, 1977 and ending October 2, 1978, or during any year which commences at five year intervals thereafter, those being the years for periodic review of the Treaty, as provided in Article XIV of the Treaty. This right may be exercised only once.

2. Accordingly, in the event of such notice, the United States would have the right to dismantle or destroy the ABM system and its components in the deployment area of ICBM silo launchers and to deploy an ABM system or its components in an area centered on its capital, as permitted by Article III(a) of the Treaty, and the Soviet Union would have the right to dismantle or destroy the ABM system and its components in the area centered on its capital and to deploy an ABM system or its components in an area containing ICBM silo launchers, as permitted by Article III(b) of the Treaty.

3. Dismantling or destruction and deployment of ABM systems or their components and the notification thereof shall be carried out in accordance with Article VIII of the ABM Treaty and procedures agreed to in the Standing Consultative Commission.

Article III

The rights and obligations established by the Treaty remain in force and shall be complied with by the Parties except to the extent modified by this Protocol. In particular, the deployment of an ABM system or its components within the area selected shall remain limited by the levels and other requirements established by the Treaty.

Article IV

This Protocol shall be subject to ratification in accordance with the constitutional procedures of each Party. It shall enter into force on the day of the exchange of instruments of ratification and shall thereafter be considered an integral part of the Treaty.

DONE at Moscow on July 3, 1974, in duplicate, in the English and Russian languages, both texts being equally authentic.

For the United States of America:

RICHARD NIXON

President of the United States of America

For the Union of Soviet Socialist Republics:

L. I. BREZHNEV

General Secretary of the Central Committee of the CPSU


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